AMENDMENTS TO THE CLAIMS:

Without prejudice, this listing of the claims replaces all prior versions and listings of the claims in the present application:

LISTING OF CLAIMS:

1-28. (Canceled).

29. (Currently Amended) A circuit arrangement for data transmission using a multi-level modulation process, the multi-level modulation process using at least one orthogonal function, the circuit arrangement comprising:

a data source for providing a data stream;

a recoder downstream of the data source;

a modulator for selecting signal points of a signal constellation according to at least one respective at least one predetermined and[/or] selected probability so as to optimize a respective at least one signal energy and[/or] a respective signal data rate, the selected signal points each having a defined respective energy, the modulator being connected to an output of the recoder;

a transmission channel, an input of the transmission channel being connected to an output of the modulator;

a demodulator, an input of the demodulator being connected to an output of the transmission channel;

an inverse recoder for executing a first operation inverse to a second operation of the recoder, an input of the inverse recoder being connected to the demodulator;

a data sink, an input of the sink being connected to an output of the inverse recoder;

a temporary storage device including a control/processing unit, the temporary storage device being capable of triggering the recoder to switch between at least two recoding tables so that there is no storage overflow;

a second temporary storage device including a second control/processing unit disposed between the inverse recoder and the sink; and

a second data sink connected to the second temporary storage device.

30. (Canceled).

31. (Canceled).

32. (Currently Amended) A circuit arrangement for data transmission using a multi-level modulation process, the multi-level modulation process using at least one orthogonal function, the circuit arrangement comprising:

a data source for providing a data stream;

a recoder downstream of the data source;

a modulator for selecting signal points of a signal constellation according to at least one respective at least one predetermined and[/or] selected probability so as to optimize a respective at least one signal energy and[/or] a respective signal data rate, the selected signal points each having a defined respective energy, the modulator being connected to an output of the recoder;

a transmission channel, an input of the transmission channel being connected to an output of the modulator;

a demodulator, an input of the demodulator being connected to an output of the transmission channel;

an inverse recoder for executing a first operation inverse to a second operation of the recoder, an input of the inverse recoder being connected to the demodulator;

a data sink, an input of the sink being connected to an output of the inverse recoder;

a temporary storage device capable of triggering the recoder to switch between at least two recoding tables so that there is no storage overflow; and

a second data source for providing the temporary storage with at least one of user data, synchronization data and check data.

33. (Previously Presented) The circuit arrangement as recited in claims 29 or 32 wherein the output of the modulator is connected in a buffered manner to the input of the transmission channel.

34. (Previously Presented) The circuit arrangement as recited in claim 33 wherein the output of the modulator is connected in a buffered manner to the input of the transmission channel via at least one of a temporary register and a buffer.

35. (Previously Presented) The circuit arrangement as recited in claims 29 or 32 wherein at least one source coding process is used for adapting a data sequence of the signal for the using of the at least one orthogonal basis function.

36. (Previously Presented) The circuit arrangement as recited in claim 35 wherein the at least one source coding process includes a Huffman method.

37. (Previously Presented) The circuit arrangement as recited in claims 29 or 32 wherein a first data source provides the signal for transmission and at least one source coding process is used for adapting a data sequence of the signal for the using of the at least one orthogonal basis function, the at least one source coding process including an error-correcting code adapted to the modulation process and a respective transmission channel for protection against transmission errors, error detection characters of the modulation process being inserted using a second data source.

38. (Previously Presented) The circuit arrangement as recited in claim 37 wherein the error-correcting code includes a block code.

39. (Previously Presented) The circuit arrangement as recited in claim 37 wherein the error-correcting code includes a convolution code.

40. (Previously Presented) The circuit arrangement as recited in claims 29 or 32 wherein the signal for transmission includes an encrypted input data stream.

41. (Previously Presented) The circuit arrangement as recited in claims 29 or 32 wherein a first data rate is selected for the transmission channel that is greater than a second data rate of the data stream.

42. (Previously Presented) The circuit arrangement as recited in claims 29 or 32 wherein synchronization data are transmitted during at least one time when no bits are present in the signal for transmission.

43. (Previously Presented) The circuit arrangement as recited in claims 29 or 32 wherein at least one of housekeeping data and user data are transmitted when no bits are present in the signal for transmission.

44. (Currently Amended) A method for providing for data transmission using a multi-level modulation process, the multi-level modulation process using at least one orthogonal function, the method comprising:

providing a data stream from a data source, wherein a recoder is downstream of the data source;

selecting, using a modulator, signal points of a signal constellation according to at least one respective at least one predetermined and[/or] selected probability so as to optimize a respective signal energy and/or a respective signal data rate, the selected signal points each having a defined respective energy, the modulator being connected to an output of the recoder, wherein an input of a transmission channel is coupled to an output of the modulator, and an input of a demodulator is coupled to an output of the transmission channel;

executing, using an inverse recoder, a first operation inverse to a second operation of the recoder;

wherein:

an input of the inverse recoder is coupled to the demodulator,

an input of a data sink is coupled to an output of the inverse recoder,

a temporary storage device includes a control/processing unit and is capable of triggering the recoder to switch between at least two recoding tables so that there is no storage overflow,

a second temporary storage device includes a second control/processing unit disposed between the inverse recoder and the sink, and

a second data sink is coupled to the second temporary storage device.

15. (Currently Amended) A method for providing for data transmission using a multi-level modulation process, the multi-level modulation process using at least one orthogonal function, the method comprising:

providing a data stream from a data source, wherein a recoder is downstream of the data source;

selecting, using a modulator, signal points of a signal constellation according to at least one respective at least one predetermined and[/or] selected probability so as to optimize a respective at least one signal energy and[/or] a respective signal data rate, the selected signal points each having a defined respective energy, the modulator being connected to an output of the recoder, wherein an input of a transmission channel is coupled to an output of the modulator, and an input of a demodulator is coupled to an output of the transmission channel;

executing, using an inverse recoder, a first operation inverse to a second operation of the recoder;

wherein:

an input of the inverse recoder is coupled to the demodulator,

an input of a data sink is coupled to an output of the inverse recoder,

a temporary storage device is capable of triggering the recoder to switch between at least two recoding tables so that there is no storage overflow, and

a second data source provides the temporary storage with at least one of user data, synchronization data and check data.

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46. (Previously Presented) The method as recited in claims 44 or 45 wherein the output of the modulator is connected in a buffered manner to the input of the transmission channel.

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47. (Previously Presented) The method as recited in claim 46 wherein the output of the modulator is connected in a buffered manner to the input of the transmission channel via at least one of a temporary register and a buffer.

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48. (Previously Presented) The method as recited in claims 44 or 45 wherein at least one source coding process is used for adapting a data sequence of the signal for the using of the at least one orthogonal basis function.

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49. (Previously Presented) The method as recited in claim 48 wherein the at least one source coding process includes a Huffman method.

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50. (Previously Presented) The method as recited in claims 44 or 45 further comprising using a first data source to provide the signal for transmission and using at least one source coding process for adapting a data sequence of the signal for the using of the at least one orthogonal basis function, the at least one source coding process including an error-correcting code adapted to the modulation process and a respective transmission channel for protection against transmission errors, error detection characters of the modulation process being inserted using a second data source.

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51. (Previously Presented) The method as recited in claim 50 wherein the error-correcting code includes a block code.

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52. (Previously Presented) The method as recited in claim 50 wherein the error-correcting code includes a convolution code.

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53. (Previously Presented) The method as recited in claims 44 or 45 wherein the signal for transmission includes an encrypted input data stream.

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~~54.~~ (Previously Presented) The method as recited in claims ~~44~~ or ~~45~~ further comprising selecting a first data rate for the transmission channel that is greater than a second data rate of the data stream.

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~~55.~~ (Previously Presented) The method as recited in claims ~~44~~ or ~~45~~ further comprising transmitting synchronization data during at least one time when no bits are present in the signal for transmission.

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~~56.~~ (Previously Presented) The method as recited in claims ~~44~~ or ~~45~~ further comprising transmitting at least one of housekeeping data and user data when no bits are present in the signal for transmission.